

What is claimed is:

1. A method for recovering an aqueous sample from an absorbent packaging material comprising absorbent
5 fibers, absorbent granules or combinations thereof and wherein the absorbent packaging material has absorbed the aqueous sample and formed a liquid-swollen absorbent gel, comprising the steps of:
 - 10 a) contacting the liquid-swollen absorbent gel with a recovery fluid for a sufficient time to disrupt the liquid-swollen absorbent gel and form a recovery mixture, wherein the osmotic pressure of the recovery fluid is higher than the osmotic pressure of the aqueous sample, and
 - 15 b) removing the recovery mixture for detection and analysis of desired analytes.
2. The method of claim 1, wherein the osmotic pressure of the recovery fluid is between 1 and 150 atm.
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3. The method of claim 2, where the recovery fluid comprises water-soluble molecules having a molecular weight less than 1000Da.
- 25 4. The method of claim 3, where the recovery fluid comprises of any of the salts listed in Table 3-120 of Perry's Chemical Engineering Handbook, 6th edition, 1984, pages 3-97 to 3-100.
- 30 5. The method of claim 4, wherein the salts are selected from the group consisting of NH_4NO_3 , $\text{KC}_2\text{H}_3\text{O}_2$, KNO_2 , KCNS and NaCl .

6. The method of claim 5, wherein the salt is NaCl.

7. The method of claim 3, wherein the recovery
5 fluid comprises simple carbohydrates.

8. The method of claim 7, wherein the
carbohydrates are selected from the group consisting of
glucose, fructose and sucrose.
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9. The method of claim 1, where the aqueous
sample is a biological fluid.

10. The method of claim 1, wherein the aqueous
15 sample is a non-biological fluid.

11. The method of claim 9, where the biological
fluid is selected from the group consisting of blood,
plasma, urine, cerebrospinal fluid, amniotic fluid and
lymph.
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12. The method in claim 9, wherein the biological
fluid further comprises substances selected from the
group consisting of toxic or non-toxic chemicals,
pharmacological drugs and alcohol.
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13. The method in claim 3, wherein the non-
biological sample comprises toxic chemicals.

14. The method in claim 10, wherein the non-
biological sample is contaminated water containing
agrochemicals or industrial compounds.
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15. The method of claim 1, where the absorbent packaging material is a cross-linked polymer.

16. The method of claim 15, where the a cross-linked polymer comprises poly(acrylic acid).

17. The method of claim 16, wherein the cross-linked polymer is ionized with monovalent counter-ions.

18. The method of claim 1, wherein the absorbent fibers are superabsorbent fibers.

19. The method of claim 1, wherein the absorbent granules are superabsorbent granules.

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20. A method for recovering an aqueous sample from an absorbent packaging material wherein the absorbent packaging material comprising absorbent fibers, absorbent granules or combinations thereof has absorbed the aqueous sample and formed a liquid swollen absorbent gel, comprising the steps of:

a) estimating the amount of aqueous sample absorbed by the polymer packaging material;

b) contacting the liquid-swollen absorbent gel with recovery fluid for sufficient time to disrupt the liquid swollen absorbent gel and form a recovery mixture, wherein the osmotic pressure of the recovery fluid is greater than the osmotic pressure of the aqueous sample, and wherein the recovery fluid is in excess of the estimated aqueous sample;

c) removing the recovery mixture.

21. The method of claim 20, wherein the volume of the recovery fluid is approximately five times more than the estimated spilled aqueous sample.

5 22. The method of claim 20, further comprising the step of detecting the presence of an analyte in the recovered sample.

10 23. The method of claim 20 wherein the absorbent fibers are superabsorbent fibers.

 24. The method of claim 20, wherein the absorbent granules are superabsorbent granules.